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ABSTRACT

An investigation was conducted to assess the effect of enterprise dominance on selected aspects of the infrastructure of agriculture. The hypothesis was that dominance of a particular type of farming in an area is signified by a set of cultural and social values that dispose the agencies serving farmers and the farmers themselves to favor interests and activities associated with the dominant enterprise, and to disparge and neglect activities associated with subordinate enterprises. Measurement of enterprise-dominance effects involved the selection of (1) an area in central Kentucky in which beef cattle production was more important than hog production, and (2) an area in western Kentucky in which these two enterprises were equally important. The survey farmers reflected in their own enterprises the area differences in relative dominance of beef cattle and hogs. The hypothesis was supported in the following ways: (1) the agent's perception of farmers' commitments to hog production, (2) the amount of time extension agent spent on matters pertaining to beef cattle compared with hogs, (3) the relative numbers of requests for information the agents received from beef cattle and hog producers, (4) the proportions of his farm visits in which the agent dealt with a beef cattle or hog production problem, (5) the farmers with whom he most often initiated contact, and (6) the relative emphasis of the extension agents on recommended practices pertaining to beef cattle and hogs. (Author/CK)

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Enterprise Dominance as Related to Communication and Farmers' Technological Competence and Satisfaction

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Enterprise Dominance as Related to Communication and Farmers' Technological Competence and Satisfaction[1]

By C. M. Coughenour

INTRODUCTION: THE PROBLEM

Regional specialization in agricultural production is as pervasive in the United States as it is worldwide. Specialization, of course, is the dominance of a particular type of farming or product in an area. Research done several decades ago, principally by the Bureau of Agricultural Economics, U.S.D.A., identified seven or eight major types of farming areas in the United States. In such analyses Kentucky was divided into a general and self-sufficing farming area and a tobacco and general farming area. In general farming areas, the most characteristic factor is the absence of a dominant crop or animal product, i.e., one that tends to exercise controlling influence on the lifeways of the rural people. These general descriptions of farming patterns are somewhat misleading on two counts: (1) they fail to take into account much local variation, and (2) structural change in agriculture has made them out of date.

The latter is especially pertinent for Kentucky as the extent of specialization has progressed rapidly in the two decades since the last major work on type-of-farming areas was completed.[2] During this period production of poultry, sheep and dairy has declined in importance in many areas of the state while that of beef cattle, swine, tobacco, and forage crops has become more important.[3] The variety of agricultural enterprises has been reduced, and some areas formerly classified as tobacco and general farming are now better described as tobacco and beef cattle areas.

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[1] The author expresses appreciation to Dr. Eldon Smith, Professor of Agricultural Economics, for his thoughtful and helpful comment on an earlier draft of this manuscript. The author, however, is responsible for its present content.

[2] C. C. Taylor and others, *Rural Life in the United States*, N. Y.: Alfred Knopf, 1949, p. 339 et passim.

[3] For a detailed statement of sources of farm income by areas of Kentucky see Wilmer Browning and Stephen Q. Allen, *Kentucky Agricultural Income Potential by Extension Areas*, Lexington, Ky.: University of Kentucky Cooperative Extension Service, Unnum. pub., 1966.

Two sets of questions may be raised with respect to dominance in type of farming and change in these patterns over time. One leads in the direction of the search for causes of specialization in agricultural production. The other directs attention to the consequences of specialization for related organizations, institutions, the production of alternative agriculture products, and the habits, attitudes and ways of living of farm people. The research reported in this paper focused primarily on several aspects of the latter problem, the consequence of dominant type of farming for communication structure, for farmers' technological competence and for the satisfactions of farmers with their farm enterprises. However, indirectly these consequences have a potential bearing on the future productivity and dominance of enterprises.

One important characteristic of commercial agriculture is a highly developed technology. Use of a scientific technology by farmers depends on the existence and efficient use of a communications system bringing new technology to farmers. As a particular farm enterprise becomes dominant in an area, what is the consequence for the communications system and, hence, for the future competitive position of this and other enterprises? Does it mean that communications efforts become increasingly concentrated on the dominant enterprise? If so, what is the consequence for alternative farm enterprises? Do they receive decreasing, perhaps disproportionately less attention? Would not the conduct of the minor farm enterprises on a scientific basis thus become increasingly difficult?[4]

Commonsense tells us that a man seeks to do those things that he finds satisfying and to avoid other alternatives. Attitude thus both reflects past experience and signifies probable future action. Where a particular enterprise dominates, is it not likely that farmers' attitudes will strongly favor it over alternative enterprises? If so, is it not also likely that the mere existence of this attitude constitutes a handicap to involvement in less favored enterprises? Moreover, will not the support of others engendered by participation in the strongly favored enterprise help carry the entrepreneur through disappointments and inevitable minor difficulties, while prevailing negative attitudes toward a minor enterprise tend to impel him to consider his first disappointment as a sign of inevitable failure?

For reasons explained in the "Research Design" part of this report, two types of farm enterprises found widely in the state—beef cattle and hogs—were chosen to test the impact of enterprise dominance.

[4] One advantage gained by a dominant enterprise is the ability of its supporters to marshall public support for research to help solve problems that arise and to maintain its competitive position. See also A. O. Hirschman, *The Strategy of Economic Development*, New Haven: Yale University Press, 1958, pp. 52-72; 98-118.

Thus, in more specific terms, the research question relates to the consequences of dominant beef cattle (or hog production) in an area for the satisfaction of farmers with the subordinate hog (or beef) enterprise, and of the impact of the dominant enterprise on the development of communications supporting the subordinate enterprise and the technical competence of farmers in each enterprise. Because beef cattle and hogs are prominent commercial farming enterprises, it was thought that investigation of these two enterprises would provide a good basis for determining the impact of a particular enterprise on these aspects of farmers' behavior.

With this general explanation, let us turn now to a more theoretical consideration of the problem.

THEORETICAL PERSPECTIVE

It has often been observed that a type-of-farming area is characterized by a prevailing culture and life style. As Dr. Carl Taylor contended, "the production of the same farm product or combination of products results in many common activities among the people, and therefore in broadly similar interests, attitudes, and values."[5] That is, when a particular type of farming is dominant in a geographic area of some size, it is not merely the most common type of farming to be found, but it also commands the principal interests of people and governs their rhythm of work and leisure activity. The dominant type of farming thus provides common personal experiences to share with others and encourages social interaction. To be in step with these rhythms is therefore associated with satisfactions; to be out of step, as would be true of someone with a different set of enterprises, frustrates desires for socially satisfying interaction with neighbors and makes the person somewhat socially isolated.

The impact of a dominant type of farming in an area extends far beyond the farmers engaged in the enterprise. If a given enterprise is quantitatively more important than others, it means that merchants, credit agencies, marketing and processing firms, and the like, acquire competency and develop more highly their organizations which service that enterprise rather than the minor ones in the area. This includes the system of communication through private firms, mass media, and government agencies, including extension units. The more a single enterprise dominates an area, the more the interests of all these people—businessmen, technical specialists, and farmers—are related.

[5] Op. cit., p. 339.

The development of competence in communication of technical information requires time and effort as does development of competence in production of a commodity. Competence and success commonly go together. As a particular type of farming becomes more and more dominant in an area, extension agents and media people find their time and activity increasingly devoted to the enterprise. Successful performance of their appointed tasks tends to depend increasingly on their competence in, and the energy devoted to, serving the farmer in the forefront. His success signifies their own success and seemingly justifies the time and effort spent in his behalf. The converse is also true. His failure is theirs also.

Thus, one general hypothesis of this study is that as a farm enterprise becomes dominant in an area, or to the extent that it dominates other enterprises in an area, it dominates the social structures, including the communication structure, and controls the resources that are instrumental to its successful operation. The present study is concerned with two corollaries of this hypothesis.

The first concerns the output of information from media to farmers, i.e., what is *available* for the farmer to use. In this respect, it is hypothesized that the more a particular enterprise becomes dominant, the more the information available to farmers is confined to the dominant enterprise. The second corollary concerns farmers' *use* of sources of media of information. If the amounts of information pertaining to farming enterprises from sources and media differ, farmers' opportunities to obtain needed information are affected, especially if the differences in available information are substantial. Thus, the more a particular enterprise becomes dominant, the more will potential receivers engaged in subordinate enterprises have difficulty finding helpful communicators and media, i.e., the less will they use particular sources compared with the use made of these sources by those engaged in the dominant enterprise. Not only is this to be expected of such sources as the Extension Agent for Agriculture and the newspaper but of other farmers as sources. That is, if one type of enterprise prevails in an area, farmers engaged in an alternative enterprise presumably would have difficulty finding other competent farmers and, in consequence, would travel farther and contact them less frequently.

A communication system that favors the dominant enterprise thereby may adversely affect the technical competence of farmers engaged in other enterprises. Farmers in the dominant enterprise find necessary information readily available; those in subordinate enterprises may have to look far afield to obtain needed information. Moreover, the presence of many with a common interest in the same enterprise

strengthens interest in matters of common welfare. If most farmers are interested in the same enterprise, many informal channels of communication are opened in which matters relevant to the operation of the enterprise are discussed. By this means the evaluation and acceptance of new technology are speeded.[6]

The second hypothesis with which this study is concerned is thus that the technical competence of farmers in areas where the enterprise is dominant will be greater with respect to that enterprise, other things being equal, than in those areas where the enterprise is not dominant.

As a particular type of farming comes to dominate an area, not only do farmers perceive more and more of their activities as related to the major enterprise, but also they perceive their welfare and their fate as tied to it. Growth of the industry is regarded as essential, and the well-being of the enterprise affects the mood of the populace. Moreover, doing well in the enterprise is widely recognized as success in one of life's most cherished activities, and brings prestige and satisfaction. The satisfaction with the enterprise is also enhanced by the expressive symbolism associated with it. Its salient qualities and activities have sometimes become heroic and romantic themes recounted in literature and song. The principal components, e.g., the man and his prize steer, the cow and her calf, are depicted in photography and art. Doubtless the more dominant the enterprise, or the greater participation in it, the more the enterprise assumes a moral quality. Not only is the enterprise "good," but also the men who engage in it, especially if successful, are "good men," members of an esteemed "fraternal" group. The opposite side of the coin is that those who engage in other types of enterprises may be regarded as "strange," perhaps as "no-bodies." The third hypothesis thus is that farmers will experience satisfaction with an enterprise, other things being equal, in direct relation to its dominance in an area.

RESEARCH DESIGN[7]

The purpose of this study was to examine the relationship between the dominance of a socio-cultural pattern and the strength of supporting social structure. This involved several considerations. First, dominance, of course, is a relational concept. There must be at least

[6] James N. Young and A. Lee Coleman, "Neighborhood Norms and the Adoption of Farm Practices," Rural Sociology, 24 (1959): 372-380; C. Milton Coughenour, "The Rate of Technological Diffusion Among Locality Groups," American Journal of Sociology, 69 (1964): 325-339.

[7] For a more technical exposition of the research hypotheses and design see Appendix A.

one prominent subordinate enterprise. Second, for both theoretic and practical reasons, the dominant pattern should be relatively important among all enterprises in the area. Not only is this essential if the type of farming is to exercise a controlling influence, but also the effects of dominance of the enterprise are easier to measure. Finally, an adequate test of our hypotheses requires that the two enterprises vary from an area in which one enterprise is dominant and the other subordinate to an area in which the reverse pattern of enterprise dominance occurs.

It is difficult, of course, to find enterprises and situations that fully satisfy these conditions. After some search, however, beef cattle and hogs were chosen as enterprises that are relatively alike and quite important statewide and to individual farmers. Moreover, counties were identified in which there is relative equivalence of the enterprises as well as where beef cattle are considerably more important than hogs. Finally, there is variation in the extent to which farmers specialize in these two enterprises. In any given area, one will find farmers with no beef cattle but for whom hogs are important. There will be other cases where the reverse is true, and, of course, there are many farmers who have some beef cattle and many hogs (or the reverse). Since the two enterprises are satisfactory from these standpoints, the decision was made to use beef cattle and hogs as the test enterprises.

After examination of 1959 Agricultural Census data, two counties in western Kentucky where beef cattle and hog production were relatively equal in importance and two counties in central Kentucky where beef cattle were much more important than hogs were selected for study. All of these counties are located in what is best described as a tobacco and livestock farming area. However, tobacco is much more important in central than in western Kentucky.

The analysis was handicapped, however, because there were no counties in Kentucky in which hog production was dominant and beef cattle subordinate.[8] This restricts the conclusions that can be drawn from the findings.[9]

As one of the hypotheses is that enterprise dominance affects the channels of communication, the chains of interpersonal contact among farmers must be determined. This cannot be done using probability

[8] The question may be raised as to whether there are areas in nearby states where hog production is dominant. Although a comprehensive survey of nearby states was not made to determine whether such an area exists, the Agricultural Census data for Iowa do indicate that there are no counties in Iowa in which hog production is dominant and beef cattle production is subordinate.

[9] It means that the *general* enterprise-dominance effects cannot be separated from the *specific* effects of beef cattle dominant and hogs subordinate. See Appendix A.

sampling methods. Either all farmers in an area must be interviewed or each farmer mentioned as a source of information must be interviewed in succession—a "snowballing" technique.

As one of the auxiliary studies required the mapping of communication structures on a community basis, all beef cattle and hog producers in the designated communities in western Kentucky were interviewed. Interviewing was completed in the summer and fall of 1963. The interviewing of beef cattle and hog operators in the central Kentucky counties, conducted in the summer of 1965, used the snowball technique primarily. In each county the starting point was a list of beef cattle and hog operators supplied by the County Extension Agent for Agriculture. The aim was to trace backward along the chain of informal communication to obtain an interview with each person mentioned as a source of information by every farmer. In addition, field interviewers were instructed to interview every farmer in the area raising beef cattle and hogs. The result was that although not every farmer in a given area was interviewed, all were interviewed who were raising either beef cattle or hogs. Thus, despite the slightly different field instructions, equivalent information on communication structure was expected.

BEEF CATTLE AND HOG PRODUCTION IN THE STUDY AREAS

The first objective in this section was to establish the relative importance of beef cattle and hogs in the study counties. Although the best research design called for three areas—areas in which beef cattle and hogs each were dominant and a third area where they were equal—we were able to find in Kentucky only one area where they were relatively equal and one area where beef cattle were dominant. Agricultural Census data were used in this determination.

As beef cattle and hogs are not equivalent units in value or in production requirements, simple numbers of animal units do not provide a satisfactory measure of their relative importance. The best measure from this standpoint is the dollar value of sales. In the two western Kentucky counties the value of sales of cattle and calves in 1959 and 1964 exceeded that for hogs and pigs by factors of 1.29 and 1.48, respectively (Table 1). By contrast, cattle and calf sales in the central Kentucky area for these two census years exceeded those for hogs and pigs by factors of 6.85 and 13.32, respectively.[10] In number

[10] Unfortunately, the dollar figures obtained from the Agricultural Census for cattle and calves, on which the ratios are based, include dairy as well as beef cattle sales. The survey information, however, indicates that dairying in these counties is relatively minor in relation to beef cattle; only 38 of 147 operators in western Kentucky had any dairy cattle, and only 17 of

(Continued on next page)

of farms on which the two types of production were carried on, there was near equality in the western Kentucky area while there were two to four times as many beef cattle farms as hog farms in central Kentucky. It thus seemed that in the western Kentucky area beef cattle and hog production was relatively equal in importance but that beef cattle were several times more important than hogs in the central Kentucky area.

Table 1.— Relative Importance of Beef Cattle to Hogs in Two Kentucky Areas, 1959 and 1964.

	Western Kentucky		Central Kentucky	
	1959	1964	1959	1964
Ratio of value of sales: cattle and calves to hogs and pigs	1.29	1.48	6.85	13.32
Ratio of number of farms reporting sales of beef cattle to farms reporting some hogs sold	1.24	1.60	2.07	4.00

Source: U. S. Census of Agriculture.

Agricultural Census information on livestock sales was obtained from a 20 percent sample. If our informants had been selected on a sampling basis, information from the interviews could have been checked against Census data. As ours consisted of large clusters of farmers, the principal purpose in comparing our findings with Census data was to determine the extent to which the study accurately reflected the relative balance of beef cattle and hogs in the two study areas as revealed by the Census.

Based on figures of gross sales supplied by the farmers interviewed, the ratio of beef cattle to hog sales in western Kentucky was 1.04, indicating near balance in the importance of the two enterprises. In the central Kentucky area, by contrast, the ratio was 5.16, suggesting that in this respect beef cattle were about five times more important. The ratios, although somewhat lower than those obtained from Census

(Footnote continued from preceding page)

139 operators in central Kentucky had dairy cattle. It thus seemed likely that the dollar value of dairy and calf sales comprised a small proportion of the total value of cattle and calf sales and the ratios of cattle and calf to hog sales would need to be adjusted only slightly downward to reflect accurately the relative importance of the two enterprises.

data, were close enough to suggest that the farmers surveyed were generally representative of the counties as a whole.

Although the ratios for each area indicated the relationship of beef cattle to hog production for all farmers surveyed, they did not tell us the range in ratios of beef cattle to hog sales on individual farms. Beef cattle was clearly the dominant of the two enterprises in central Kentucky as 83 percent of the farmers received more than 60 percent of beef-hog income from beef cattle alone. In western Kentucky, by contrast, this was the case for only 46 percent of the farmers while hog production was substantially more important for 34 percent of the farmers (Table 2). The latter two percentages, of course, reflected the more even balance in the importance of the two enterprises in the area, although for the area as a whole, beef cattle were slightly more important than hogs. These data thus confirmed that so far as these two enterprises were concerned, the western Kentucky area represented a situation in which there was relative balance in the importance of the enterprises while the central Kentucky area represented a situation in which beef cattle was the dominant type of farming.

However, for an area to be characterized by a particular type of farming, more is required than that this type be more important than

Table 2.— Relative Importance of Beef Cattle and Hogs as Sources of Income to Farmers by Area.

Ratio of Beef Sales Beef and Hog Sales*	Western Kentucky	Central Kentucky
	Percent	Percent
Hogs more important: ratio less than 40	34	7
Hogs and beef cattle equal: ratio 40 to 59	20	10
Beef cattle more important: ratio 60 or larger	46	83
All operators	100 (N=147)	100 (N=139)

*The relative importance of beef cattle to hog gross sales was calculated as follows: $\frac{\text{Beef cattle sales}}{\text{Beef cattle + Hog sales}} \times 100$.

some one other particular farm enterprise. If beef cattle exercise a "characterizing" influence in the area *they should tend to be dominant with respect to all* farm enterprises in the area. We were particularly interested in the situation in central Kentucky, of course, as this was the test area in which beef cattle presumably occupied a dominant position alongside tobacco. Agricultural Census data did indeed suggest that beef cattle held a dominant position. In the two central Kentucky counties the value of sales of cattle and calves comprised 73 percent of the value of 1959 sales and 78 percent of 1964 sales of all livestock and livestock products including sales of poultry, sheep, dairy products, horses, etc. In the western Kentucky area, by contrast, the value of cattle and calf sales in 1959 was only 39 percent of total livestock sales, while in 1964 the figure was 42 percent. Thus, it seems quite evident that in central Kentucky beef cattle dominated all other *animal* enterprises, individually or combined, as a source of farm income, but this was not the case in western Kentucky.

Although beef cattle production clearly dominated other livestock enterprises in central Kentucky, there was a question as to their significance as a source of farm income compared with all farm enterprises. In this respect, the sale of cattle and calves accounted for about a third of the value of sales of all farm products in both 1959 and 1964.[11] On the other hand, the sale of tobacco accounted for about 52 percent of the 1964 value of all farm sales in central Kentucky. It is thus clear that beef cattle held a prominent, but not the dominant, position among all income-producing enterprises in central Kentucky.

So far as the test of the enterprise dominance hypothesis was concerned, it was desirable, but not necessary, that beef cattle be the dominant enterprise in the area; it was necessary only that they be more important than the subordinate enterprise with which they were compared and that they be of sufficient importance to affect the dependent variables of interest. That beef cattle were an important enterprise and one much more important than hogs seemed evident. Hence, from this standpoint the central Kentucky area should be a satisfactory one in which to test the hypotheses.

However, as beef cattle and tobacco were both more important than hogs in central Kentucky (and tobacco more important in central than western Kentucky), the possibility arose that any relationships between enterprise dominance and the dependent variables might be

[11] Agricultural Census of 1959 and 1964. By comparison, the sale of cattle and calves in the western Kentucky counties in 1959 and 1964 accounted for a quarter of the value of sales of all farm products. In the central Kentucky area, the sale of beef cattle accounted for 50 percent or more of the total gross farm income during the year preceding the survey for 24 percent of the farmers surveyed.

due to the dominance of tobacco, or of tobacco and beef cattle combined, rather than beef cattle alone. For some purposes the possibility of contaminating effects of tobacco dominance is controlled by the nature of the question asked. However, it is a possibly contaminating factor with respect to certain of the measures of communication structure. As the area effect of tobacco could not be controlled statistically in the present analysis, there was no recourse except to be suitably cautious in drawing conclusions where the possibility of a spurious effect arises.

Beef Cattle Enterprises

Cow-calf operations were relatively more important than feeding operations in western Kentucky, while the opposite was true in central Kentucky. The scale of operations was larger in central Kentucky, as indicated by a median value of sales in the year preceding the survey of $5,400, compared with $2,400 in western Kentucky. However, in the proportionate contribution to farm income there was little difference in central and western Kentucky. For the most part, the difference in size of enterprise reflected the dominance of beef cattle in central Kentucky in which we were interested; the other differences did not importantly affect the analysis.

Hog Enterprises

The market for hogs has been such that many farmers sell finished hogs to the extent that they have sufficient supplies of corn to do so. The excess pigs are sold as feeders. In central Kentucky, almost all farmers sell their pigs as feeders, while in western Kentucky, where corn is more plentiful, many farmers sell finished hogs, and about a third of the farmers purchase additional feeder pigs to fatten. As determined, the scale of hog enterprises was not greatly different in the two areas, as the median value of sales was $1,900 in central Kentucky and $2,400 in western Kentucky. However, because farms are smaller in western Kentucky hog production makes a greater contribution to total farm income than in central Kentucky. This difference, of course, is expected in view of the greater importance of the hog enterprise relative to beef cattle in western Kentucky.

Scale of Farming

As already suggested, the total farming operation of the average farmer in central Kentucky is larger than that in western Kentucky.

When scale of farming is measured by the dollar value of farm

output, nearly half (48 percent) of the study farmers in western Kentucky had gross receipts of less than $5,000 compared with only 13 percent of those in central Kentucky (Table 3). In fact, in terms of median farm income the gross value of farm products in central Kentucky was two and a half times as great as in western Kentucky.

Table 3.— Scale of Farming by Area.

Scale of Farming	Western Kentucky	Central Kentucky
	Percent	Percent
Gross receipts from farm products:		
$21,000 or more	11	27
$13,000 to $20,999	9	24
$8,000 to $12,999	15	22
$5,000 to $7,999	17	14
$3,000 to $4,999	24	8
Less than $3,000	24	5
All operators	100	100
	(N=140)	(N=136)
Median	$5,350	$13,380
Productive-Man-Work-Units:*		
3,500 or more	31	43
2,000 to 3,499	28	35
Less than 2,000	41	22
All operators	100	100
	(N=147)	(N=139)
Median	2,640	3,600

*Productive-Man-Work-Units is a measure of labor input in the farm operation; see footnote 12.

The amount of time in man-days per year required to produce a unit of farm product, e.g., an acre of pasture or tobacco, one beef cow, etc. (P-M-W-U), is another standard indicator of the scale of farming operations.[12] In these terms, also, the farming operations in central Kentucky were larger as may be seen by the fact that 43 percent, compared with 31 percent in the western Kentucky area, had operations rated in excess of 3,500 P-M-W-U (Table 3). On this basis farming operations in central Kentucky are larger than in western

[12] A P-M-W-U is the number of acres of tobacco, or number of beef cows, etc., which would fully occupy the labor of one able-bodied adult male full time for one year, or its equivalent in man months of labor.

Kentucky, although not to the same degree as is apparent in terms of the dollar value of farm output.

Although differences in the scale of farming operations between central and western Kentucky are of interest in their own right, for purposes of the present investigation this is a complicating factor (as are differences in the type of beef cattle and hog enterprises) as it may confound differences in communication structure, farmers' technological competence, and satisfactions with their enterprises. It is necessary, therefore, to control scale of farming statistically when testing the enterprise dominance hypothesis.

The Subordinate Farm Enterprise

As beef cattle are the dominant type of farming in central Kentucky, the farmers in this area for whom hogs are relatively more important than beef cattle, or for whom the hog enterprise makes a considerable contribution to total farm income, are atypical in type of farming (Table 2). Unfortunately, for purposes of this investigation such farmers were very few in number.

Only five farmers in the sample had hog enterprises larger than their beef operations, and in only six cases did hogs make a "considerable" contribution to farm income. Even when one considers the cases in which beef cattle and hogs were nearly equal in importance, or in which hogs made a "moderate" contribution to farm income, the number of cases was still small. This, of course, made a statistical comparison of the use of communication media, satisfactions and technical competence extremely difficult—a prospect that we could not anticipate until the data were collected and tabulated.

SOCIAL CHARACTERISTICS OF FARMERS AND IMPORTANCE OF FARM ENTERPRISE

We wished to know, for example, whether beef cattle producers in the central Kentucky area made a greater use of the Agent, in each instance the County Extension Agent for Agriculture, than did producers in the western Kentucky area. The enterprise-dominance hypothesis is that they do, owing to the presumed larger claim that farmers with the dominant beef enterprise in the central Kentucky area make on the agent's time and effort. However, if one finds area differences in use of the Extension, it might be because beef cattle operators in central Kentucky had larger farms as already noted, or to some other characteristic of the farmer that might be associated with contact with the Extension Agent. Consequently, it was necessary

to know whether there were area differences in various social characteristics of farmers, and, if so, whether they were associated with the importance of beef cattle and hogs in the farmer's farming operations. Such associations as occurred had to be taken into account in evaluating the enterprise-dominance hypothesis.

In general, farmers in the central Kentucky area were better educated, were more commercial minded in their farming operations,[13] had a somewhat higher social status, and were slightly younger than farmers in western Kentucky (Table 4). Of these factors the most important was the difference in educational level, both because the difference was relatively larger for this factor and because previous

Table 4.— Social Characteristics of Farmers by Area.

Characteristics of Farmer	Western Kentucky	Central Kentucky
	Median	Median
Age (years)	51.6	49.9
Education (years)	8.7	9.8
Social Participation Score[a/]	5.2	5.3
Index of Social Status[b/]	3.4	3.9
Index of Commercial Farming Attitude[c/]	55.3	67.5

[a/] Chapin Social Participation Score based on participation in formal organizations.

[b/] Index of social status is based on a measure of level of living derived from possession of selected household items and the respondent's identification of his own social class.

[c/] Index of commercial farming is based on the farmer's responses to questions on attitude toward new knowledge, use of credit, management, cost of new technology, farm records, and specialization in farm enterprises. For details see Appendix B.

[13] Commercial and subsistence farmers have different attitudes toward the means and objectives of agricultural production. See Frederick C. Fliegel, "Obstacles to Change for the Low-income Farmer," Rural Sociology, 25 (1960): 347-351; Frederick C. Fliegel, "Differences in Prestige Standards and Orientation to Change in a Traditional Agricultural Setting," Rural Sociology, 30 (1965): 278-290; Alfred Dean, *et al.*, "Some Factors Related to Rationality in Decision-making Among Farm Operators," Rural Sociology, 23 (1958): 121-135; William H. Metzler, "Socioeconomic Aspects of Manpower Adjustments: Low-income Rural Areas," Rural Sociology, 24 (1959): 226-235. To assess how strongly farmers favored the kinds of decisions and activities necessary to modern commercial farming, each farmer was asked a series of questions about his attitude toward the importance of scientific technology, use of credit, the necessity of farm planning, keeping records, the cost of new technology, and the desirability of specialization in farm production. (See Appendix B for details of the attitude questions.) Responses to these questions were combined in a Likert type scale. The commercial farm orientation scale reflects the strength of the farmer's orientation to commercial farming.

As the distribution of scores in Table 4 indicates, the majority of farmers in both study areas scored more toward the commercial (high) than the subsistence (low) farming end of the scale. Fifty-four percent of the farmers in western Kentucky and 77 percent in central Kentucky scored over 50 on the scale, but the farmers in central Kentucky were the most commercial minded.

research indicates that education is significantly correlated with the use of communication media and technological competence.

Tests of the enterprise-dominance hypothesis would be simplified, perhaps, if farmers raised either beef or hogs, but not both. The latter, however, is the most common situation even in central Kentucky. Consequently, the question that we sought to answer was whether farmers for whom hogs were *highly important* made as great a use of the Extension Agent, for example, as did farmers for whom beef cattle were *highly important*. Importance of beef and hog enterprises has been measured in four ways: (a) importance of the hog (beef) enterprise as the ratio of gross receipts from hogs (beef) to the total gross farm income; (b) the *relative* importance of hogs to beef measured by the ratio of the gross receipts of the two enterprises; (c) importance of the hog (beef) enterprise in terms of the farmer's subjective ranking of the importance of the hog (beef) enterprise in his farming operations; and (d) the *relative* importance of the beef to hog enterprise based on a comparison of the farmer's ranking of the importance of each enterprise in his farming operations. The relationship of these four indicators to age, education, social participation, social status, attitude toward commercial farming, and gross farm income was the major objective of this section.

Fortunately, for our purposes, enterprise importance is not related to education, social status, or extent of favorable attitude toward commercial farming in either central or western Kentucky. In western Kentucky, but not central Kentucky, the farmers for whom beef cattle were an important enterprise, regardless of the measure used, tended to be somewhat older. Hogs as an important enterprise, on the other hand, were most common among the younger farmers. In both study areas, the farmers with important (relatively large) hog operations tended to participate less in formal social organizations, indicating that they were less extensively involved in the organizational life of their communities. In no case, however, did it appear that the relationships were of such significance that the analysis of enterprise importance and communication structure, farmers' technological competence and satisfactions would be affected thereby. However, the situation with respect to scale of farming and enterprise importance was more complex and of interest in its own right. It is thus discussed in greater detail.

Scale of Farming Operations and Enterprise Importance

Conventional wisdom has it that as subsistence farming declines and commercialized farming increases farming operations become

more specialized. Since large farms are more often commercial operations than small farms, and both beef cattle and hog production are predominately commercial operations today, one would expect to find the large farm operators more specialized in their beef and/or hog enterprises than the small farmers. If this were true, then the importance of beef or hog enterprises should increase as the scale of farming, measured either by gross farm receipts or productive-man-work-units, increases.[14]

The evidence, however, points to a contrary conclusion. In western Kentucky as the scale of farming increased the importance either of beef or hogs as enterprises in total farm operations declined, whether importance was measured objectively in terms of the enterprise's contribution to farm sales or subjectively by the farmer (Table 5). These structural relationships were less pronounced in central Kentucky, but it seemed clear that hog production declined in importance as one went up the size-of-farm scale. For beef cattle enterprises, the

Table 5.— Association Between Importance of Hog and Beef Enterprises and Scale of Farming by Area.[a]

Importance of Enterprise	Western Kentucky		Central Kentucky	
	P-M-W-U	Gross Farm Sales	P-M-W-U	Gross Farm Sales
As importance of beef income increases:[b]	Decreases (G=-0.42)	Decreases (G=-0.25)	Decreases (G=-0.24)	Decreases (G=0.26)
As importance of hogs income increases:[b]	Decreases (G=-0.09)	Decreases (G=-0.10)	None (G=-0.02)	Decreases (G=-0.13)
As importance of beef increase (ranks):[c]	Decreases (G=-0.32)	Decreases (G=-0.28)	Decreases (G=-0.18)	Increases (G=0.11)
As importance of hogs increase (ranks):[c]	Decreases (G=-0.12)	Decreases (G=-0.17)	Decreases (G=-0.17)	Decreases (G=-0.28)

[a] All entries indicate kind of relationship with importance of enterprise as scale of farming increases. Gamma (G) is the measure of association.

[b] Importance of enterprise in terms of gross sales is a proportion of total sales.

[c] Importance of enterprise as ranked in relation to other enterprises by farmer.

[14] See n. 12.

importance of the enterprise *increased* as farms became larger, when scale was measured by total sales, but it *decreased* as farms became larger when scale was measured by P-M-W-U's.

A full explanation of these findings requires more information than is available in this study, but further insight is gained by examining the relative importance of beef and hogs on farms in relation to the scale of farming. In western Kentucky, operators of relatively small farms tended either to have predominately beef or hog operations, with the former outnumbering the latter by 2 or 3 to 1. It was earlier noted that the farmers for whom beef cattle were an important enterprise tended to be older, so that in this area there was evidently a considerable number of older farmers with small beef cattle operations. By contrast, the large-scale farmers in the western Kentucky area were as likely to have both beef and hogs as equally important enterprises, or hogs as the predominant enterprise, as they were to have beef cattle as the main enterprise. No doubt it was the tendency for many large-scale farmers to have balanced beef and hog enterprises, together with a very strong relationship between scale of farming and income from tobacco,[15] that accounted for the inverse relationship between importance of beef and hog enterprises and scale of farming noted earlier. In this area an increase in scale had not led to specialization in one of these animal enterprises.

The situation in the central Kentucky area was more cloudy. Among the small as well as the large-scale farmers the main animal enterprise for most farmers was beef cattle. However, farmers with balanced hog and beef cattle operations or mainly hogs were primarily moderate to large-scale operators. Both the operators of the small scale and the very largest scale farms were primarily beef cattle producers. The factor, which perhaps more than anything else accounted for the negative relationship between importance of beef cattle enterprise and farm scale measured by P-M-W-U's was burley tobacco. It was the principal enterprise in the area and, of course, required a heavy labor input which was reflected in this measure of farm scale.[16] When importance of beef cattle and scale of farming were measured in terms of gross receipts, however, the situation was somewhat different. Although the main tendency was for income from tobacco and scale of farming to be strongly related (gamma 0.80), there were a number of large-scale farmers with important beef enter-

[15] Gross receipts from tobacco were associated with P-M-W-U at 0.70 (gamma) and with total farm gross receipts 0.78 (gamma).

[16] There was even a stronger association between gross receipts from tobacco and P-M-W-U (gamma 0.88) in central than in western Kentucky.

prises who derived relatively less income from tobacco. It was this situation which resulted in a modest positive relationship between farm scale and importance of beef enterprise when both were measured in terms of gross receipts.

COMMUNICATION STRUCTURE AND ENTERPRISE IMPORTANCE

The stage was then set for an examination of our major hypotheses. We examined our two study areas in western and central Kentucky and found that they differed as to the relative dominance of beef cattle (in relation to hogs). Moreover, individual farmers in each area differed as to the balance in the two enterprises. Thus, there was a possible cause of area differences in communication structure, technological expertise, and satisfactions with enterprises. Specifically, in the central Kentucky area, where beef cattle were the dominant enterprise, we expected to find the flow of information dominated by information about beef cattle. We also expected the structures through which the information flows to be better developed for beef cattle than for other types of enterprises, e.g., hogs. It was then necessary to determine whether in fact there were area differences in communication structure, which served beef cattle producers better than hog producers. Of course we found that the farmers in central Kentucky differed from their counterparts in western Kentucky in other ways—notably, in amount of education and scale of farming, and these variables would have to be controlled in reaching final conclusions about the relationship of enterprise dominance to communication structure. However, the first step was to find out whether there were area differences in communication structure. If there were, then we would want to control for possible confounding influences.

The analysis of communication structure takes into consideration two elements. One is the relationship between the source and the recipient of information, and the other is the media through which the information flows. Information to farmers, of course, comes from a variety of sources and flows through different media. Its sources are agencies and individuals, both governmental and private. The media are diverse: newspaper, television, radio, letters and personal contacts. It was much too large a task for this study to attempt to examine the relationships between farmers and *all* their sources of information, or for *all* media. We were selective, therefore, of the sources and media which previous research indicated are sources and media of primary importance to farmers.

The flow of information can be examined from the standpoint of both the sender and the recipient. Although the bulk of the analysis was concerned with the structure of communications as perceived by the recipient, the analysis was first concerned with the communication structure from the standpoint of one medium—the newspaper—and one source—the Cooperative Extension Service Agent for Agriculture.

Newspaper Coverage of Beef Cattle and Hogs

The newspaper provides a readily accessible source of data on communications activity. Farmers in the study areas are served by two newspapers with regional circulation—*The Louisville Courier-Journal and Louisville Times*—and several newspapers originating locally. Newspapers which originate in the western Kentucky area are the *Park City Daily News* (Bowling Green), *Franklin Favorite* (Franklin), and *Green River Republican* (Morgantown). *The Lexington Herald, Lexington Leader, Mt. Sterling Advocate*, and *Richmond Daily Register* are the principal newspapers available in the two central Kentucky counties. The amount of space in these newspapers devoted to beef cattle, hogs, and related matters provides a measure of the output of information available to farmers. As the *Courier-Journal* and *Louisville Times* serve farmers in both areas, the primary concern is with the relative amounts of space devoted to the two enterprises in those newspapers originating locally in each area. Accordingly, the latter newspapers were examined for a two-year period ending in the survey year, for each area. In each edition the articles that pertained to agricultural matters were noted and classified as to whether they provided information either (a) directly relating to beef cattle or hogs, or (b) indirectly or not at all relating to beef cattle or hogs. Any information pertaining to the marketing, feeding, breeding, culling, control of disease, or care of beef cattle or hogs was classified as relating directly to the enterprise. All other information was classified as either indirectly or not related to these two enterprises. Once an article was classified in this manner, the amount of space was measured and recorded and the total space for each enterprise and type of content was computed.

In accordance with the hypothesis of enterprise dominance, one would expect to find little difference in the amount of space devoted to each enterprise in western Kentucky newspapers, while the space devoted to beef cattle information would greatly exceed that for hogs in the central Kentucky papers. It is evident in Table 6 that more space was devoted to beef cattle in central than western Kentucky papers, but more space was also given in the former newspapers to

information about hogs. The key item was the relative difference in the amount of space given to the two enterprises, and, in this respect, there was little difference in the areas (13 percentage points difference compared with 15 percentage points). Thus, the amount of infor-

Table 6.— Relative Space Devoted to Beef Cattle and Hog Enterprise Information by Area Newspapers.

Type of Information	Western Kentucky[b]		Percent Difference	Central Kentucky[c]		Percent Difference
	Beef Cattle	Hogs		Beef Cattle	Hogs	
	Percent			Percent		
Information directly relating to the enterprise[a]	22	9	13	33	18	15
Information indirectly or unrelated to enterprise	78	91		67	82	
Total	100	100		100	100	

[a] Includes any information pertaining to marketing, feeding, breeding, culling, control of disease, care of livestock, etc., measured in column inches.

[b] Newspapers reviewed: Park City Daily News, Franklin Favorite, Green River Republican.

[c] Newspapers reviewed: Richmond Daily Register, Mt. Sterling Advocate, Lexington Leader, Lexington Herald.

mation about beef cattle predominated in each area irrespective of the enterprise's relative importance.

Although there was thus no evidence that enterprise dominance, as herein measured, contributed to a difference in information output, the findings raised a question as to the reason that beef cattle were generally favored in newspaper coverage. The data collected in this survey do not provide an answer to this question. However, similar patterns of difference occur elsewhere in this report and the question is considered again in the concluding remarks.

The Cooperative Extension Service Agent for Agriculture as a Source

The principal source of technical assistance used by farmers in a county is the Cooperative Extension Service. At the time that these surveys were made the Extension Agent for Agriculture (hereafter referred to as "the agent") was the one person having primary

responsibility for developing and conducting agricultural programs. It is thus particularly important to examine his orientation to the two enterprises in question, his activities, and his relationships to farmers who regard beef cattle or hogs as important enterprises. The purpose of the investigation, of course, was to determine in what ways agents' orientations, activities, and relationships to farmers reflect the relative dominance of the enterprises in their county.

1. ORIENTATIONS TO BEEF CATTLE AND HOGS

From the standpoint of their personal interest in the two enterprises the agents in western Kentucky, like those in central Kentucky, had a greater interest in beef cattle than in hogs. However, the agents in the western Kentucky area had more nearly similar levels of interest in the two enterprises than did the central Kentucky agents. The agents' expressions of their own interests in this case contrast somewhat with those of the farmers who indicated that they did not perceive a difference in the agents' interests in beef cattle and hogs.

At the same time the agents in western Kentucky were much less interested in hay, roughage, and pasture, which are related aspects of a successful beef cattle enterprise, than in corn, which is important in most types of hog enterprises. In this respect, the agents in the central Kentucky area professed a more nearly balanced interest in the related aspects of beef cattle and hog production.

Another aspect of the agent's orientation to farm enterprises is his perception of the needs of farmers in his county. The agents in central and western Kentucky saw the needs of farmers differently in ways that reflected the different relative prominence of th enterprises in each area. In particular, agents in central Kentucky felt that a major need was to develop a more stable and permanent commitment to a second livestock enterprise, either dairying, hogs, or sheep. Indeed, considerable stress in extension programs was placed on the importance of having another livestock enterprise in addition to beef cattle. In the absence of a commitment on the part of farmers to a second livestock enterprise, the agents felt frustrated in their attempts to deal with the technical problems, for example, of hog production. The situation was quite different in western Kentucky with its more diversified program where, understandably, there seems to have been little concern with the problem of the farmer's commitment, and the agents were more concerned with farmers' technical needs in management, production and marketing.

Thus there were some, although perhaps not striking, area differences in the agents' orientations to beef cattle and hogs, which relate

to, but do not depend on, the relative dominance of the enterprises in each area.

2. ACTIVITIES OF THE EXTENSION AGENT FOR AGRICULTURE

The agents were asked how they felt the extension program in their county contributed to the satisfaction of farmers' needs as the agents perceived them to be. Each agent placed emphasis on a somewhat different method of approaching the problem; however, both agents in central Kentucky indicated that they had never been very successful in developing interest in hog production and an effective organization of producers.

As hypothesized, the relative amount of time that an agent spends on activities related to a particular enterprise would seem to be determined by the prominence of the enterprise. Significantly, the western Kentucky agents estimated that they spent equal time on hogs and beef cattle, while the central Kentucky agents felt that they spent relatively more time on beef cattle than hogs. The relative time spent on the two enterprises thus parallels the pattern of relative interests in the enterprises as well as the relative dominance of the two enterprises in each area.

Despite a desire to develop a viable hog enterprise in their area, central Kentucky agents spent relatively more time on matters relating to beef cattle. Much of the time spent was in response to farmer demands for information and advice, which to some extent reflected the greater number of beef cattle producers in the area. In western Kentucky the agents mentioned that they routinely answered requests for a variety of kinds of information relating both to beef cattle and hogs. The central Kentucky agents expressed a similar assessment of farmers' interests in information about beef cattle, but agents in both sections stated they got few requests for information about matters relating to hog production. Nearly all the information bearing on the latter enterprise that was distributed was on the agent's initiative. They had to see the farmer individually, call a meeting, or perhaps use the mass media. Thus, the pattern of activity, both in the way the agents spent their time and in requests for information by farmers, reflected the dominance of beef cattle.

From this standpoint, farmers' reports of their use of information channels employed by the agent are significant. Farmers were asked whether they listened to the agent on the radio, read his circular letters, or attended meetings and field days held by the agent. Compared with beef cattle and hog producers in western Kentucky, the central Kentucky beef producers more often listened to the agent's

radio program but *less often* than hog producers attended meetings or field days. Central and western Kentucky beef cattle and hog producers were equally likely to have read the agent's circular letters. As the scale of farming is larger in central than in western Kentucky, the differences in radio listening and attending of meetings were examined for farms with equal scale. There was no difference in radio listening between areas for farmers with equal-sized farms, but there was a difference in attending meetings. Seemingly, the agents in the central Kentucky area might have compensated for the dominance of information about beef cattle in many information channels by organizing meetings for hog producers. The attendance of farmers at these meetings might have indicated a greater interest in hog production than the agent gave the farmers credit for. This does not necessarily contradict the agents' perceptions, however, that central Kentucky hog producers exercised little initiative in seeking information from him.

The estimated relative proportion of farm visits concerned with problems relating to beef cattle and hogs also reflected the relative dominance of the two enterprises in each area. In western Kentucky the agents estimated that they dealt with a problem pertaining to beef cattle in about 10 percent of their farm visits, and the same was true in respect to hogs. In central Kentucky, on the other hand, although the agents estimated that they dealt with a hog problem in about the same proportion (10 percent) of their farm visits, they estimated that they dealt with a beef cattle problem proportionately twice as often.

In view of the greater interest in, and time spent by, agents in central Kentucky on beef cattle as well as the greater interest of farmers in this area in beef cattle, one would not be surprised to find that the agents did a relatively better job of promoting improved technology relating to beef cattle than hogs. Each agent was asked about the emphasis he had given in his work to each of a representative list of new or recommended practices relating to beef cattle and hogs. In this respect it is not surprising that, compared with the agents in western Kentucky, the central Kentucky agents had placed greater emphasis in work with beef cattle farmers on 6 of 12 recommended practices. In no case had greater emphasis been given to a practice in western than in central Kentucky. It is somewhat surprising, however, that the agents in central Kentucky also had given greater emphasis than those in western Kentucky to two of eight recommended practices pertaining to hog production, and only with respect to one practice was the reverse true. Even so, comparing the agents' emphasis

on beef cattle and hog practices, one would conclude that the relative emphasis given to recommended technology for an enterprise conformed to the relative dominance of the enterprise in the area and the relative time spent by the agent in dealing with new technology pertaining to the enterprise.

3. RELATIONSHIPS OF EXTENSION AGENTS WITH FARMERS

By legislative authority the Cooperative Extension Service is to provide useful and practical information to rural people. The agent is the end of the bureaucratic chain established to accomplish this mission. His activities in respect to agriculture eventually bring him into contact with most, if not all, farmers in his county. It is upon these contacts, and the relationships to farmers that develop therefrom, that the effectiveness of the agent in the long run depends.

Extension agents, of course, do not have equal contact with all members of their constituency. Studies indicate that farmers having contact with the agent tend to be better educated, to have a higher social class position, to have larger farms and higher farm incomes, to use more sources of farm information, and to be otherwise more progressive.[17] From this, most observers have concluded that extension's primary clientele is the higher social status and larger scale farmers—and even that extension's programs favor these farmers.

From the standpoint of this study, however, primary interest is in whether the agent's clientele also reflects a selection of those farmers engaged in the dominant type of farming in the area. To answer this question it is desirable first to examine various aspects of the agent-farmer relationship—frequency of contact, initiative in establishing contact, the agent's opinion of the value of the farmer's judgment, and his rating of the farmer's success—and, second, to determine whether variation in these aspects is related to type of farming dominance.

The agents have many contacts with farmers which do not pertain to agricultural matters. This is reflected in that the agents indicated that they had contact for agricultural purposes with only 76 percent of the farmers surveyed (compared with the 93 percent contacted for all purposes). Overall, farmers expressed views of their relationships similar to those of the agents in that 65 percent of the farmers indicated that they had had personal contact with the agents relating to agricultural matters, and 30 percent indicated that this involved 8 or more contacts during the year. Whether one takes the agent's or

[17] C. M. Coughenour, *Agricultural Agencies as Information Sources for Farmers in a Kentucky County, 1950-1955* (Lexington, Ky.: Kentucky Agricultural Experiment Station, Progress Report 82, November 1959); E. M. Rogers, *Social Change in Rural Society* (N. Y.: Appleton-Century-Crofts, 1960), pp. 324-333.

the farmer's view of their relationship, therefore, it is evident that for many there was a substantial basis for the provision of advice and counsel. But this basis for rendering service was not the same for all farmers.

Moreover, as previous studies have shown, the relationships of agents to farmers were not evenly distributed over the range of social status but tended to cluster among the higher social status farmers (Table 7). In this case, the agent had five or more contacts per year with 72 percent of the high status farmers but with only 40 percent of the low status farmers.

Table 7.— Contacts with Farmers as Reported by the Extension Agent by Socioeconomic Status of Farmer.

Socioeconomic Status	Frequency of Contact in Past Year				Total
	1-4	5-8	9-13	14-17	
High	28	28	29	15	100 (N 108)
Low	60	15	15	10	100 (N 158)
All farmers	47	20	21	12	100 (N 216)

However, does enterprise dominance affect this relationship? The evidence, whether derived from the agents' or farmers' reports of their relationships, does not suggest that an enterprise-dominance effect exists with respect to direct, personal contact.

Beef and hog producers in each area were equally likely to have had contact with, and received help from, the agent. Thus, although there were social status differences in the frequency of contact with the extension agent, no difference was associated with type of enterprise and enterprise dominance.

Contact between an agent and a farmer may occur because of some initiative of the agent or of the farmer in seeking the other, or because they happen to find themselves together on some occasion of mutual interest. In his role, of course, the agent arranges many occasions in which he has contact with farmers so as to bring information of importance to them. On the other hand, the more the farmer plans his farming activities and the more active he is in seeking information pertinent to his farming situation, the more he is likely to contact the agent to obtain information that is not otherwise immediately available. The initiative taken in establishing or maintaining a relationship, there-

fore, reflects the equality of performance of the agent and of the farmer in their respective roles. For example, if most contacts occur by chance, one might contend that neither the farmer nor the agent is performing his role satisfactorily. On the other hand, if most relationships occur through purposeful effort but if the initiative is usually taken by the agent, one might conclude that although the agent is performing his role satisfactorily, the farmers are not sufficiently aggressive in searching for information.

With this in mind, the agents were asked to evaluate each relationship they reported in terms of whether the contact with the farmer was usually by chance or was due to deliberate action either on the part of the agent or the farmer. In their view, most (78 percent) of the relationships occurred from deliberate action rather than by chance, and of the purposeful contacts nearly twice as many (38 percent to 22 percent) occurred because of initiatives taken by the agents than by the farmer. As the frequency of contact between the agent and the farmer varies by social status, the deliberateness and relative initiative in making contact also are distributed by social status. Indeed, more of the contacts with high status farmers are deliberate, and relatively more of the latter occur owing to initiatives taken by farmers (Table 8).

Table 8.— Percent Distribution of Farmers by Initiator of Contact (According to the Extension Agent) by Socioeconomic Status of Farmer.

Socioeconomic Status	Initiator of Contact			Non-deliberate contact	Total
	Agent	Both	Farmer		
High	33	30	23	14	100 (N=100)
Low	27	32	13	28	100 (N=142)

As the agents view others, 86 percent of their contacts with high status farmers occurred because of deliberate action, compared with 72 percent of their relationships with low status farmers. In general, however, there was not a great difference among social status levels in the deliberateness of, and initiatives in, contact. This reflects well on the quality of performance of both the lower status farmer and the agent.

From the standpoint of the principal objective of this study, however, the major issue is whether beef cattle producers in central Kentucky differ from hog producers in the deliberateness and the

initiatives taken in establishing relationships with extension agents. From the agents' accounts of the way in which they spend their time and of the interests of farmers in the enterprises, one might expect to find extension agents initiating most contacts with beef cattle producers. On three of the four indicators of enterprise importance, central Kentucky extension agents not only initiated more contacts with farmers for whom beef cattle were most important but did so proportionately more often than did extension agents in western Kentucky (Table 9). Although the evidence was not completely consistent, it did suggest the presence of an enterprise-dominance effect such that the agent initiates relatively more contact with those producers having the dominant enterprise.

Table 9.— Percent of Farmers with Whom Contact is Initiated by the Extension Agent by Indicator of Enterprise Importance, and Area.

	Central Kentucky	Western Kentucky
	Percent	Percent
1. Beef cattle income important[a]	32	20
Hog income important	36	16
2. Beef cattle more important than hogs: ranks[b]	55	20
Hogs equal or more important than cattle: ranks	29	16
3. Beef cattle ranked as important[c]	43	20
Hogs ranked as important	36	26
4. Beef cattle relatively more important: income[d]	47	20
Hogs equal or relatively more important: income	28	17

[a] Beef cattle sales exceeded 25 percent of total farm sales; hog sales exceeded 15 percent of total sales.

[b] Beef cattle ranked in importance by farmer two or more ranks higher than hogs by farmer; hogs ranked equal in importance to beef cattle by farmer or two or more ranks higher in importance.

[c] Ranked importance of beef cattle by farmer; ranked importance of hogs.

[d] Either income from beef cattle was equal to or greater than 60 percent of income from beef cattle and hogs, or income from beef cattle was less than 60 percent of income from the two enterprises.

If, because of the dominance of an enterprise in an area, the agent was biased in favor of farmers having the dominant enterprise, it might be thought that he would tend to perceive the latter to have better judgment about farming or to be more successful. To determine whether this was the case, each agent was asked to evaluate those farmers with whom he indicated a relationship in terms of his (the agent's) respect for the farmer's opinion on the one hand and, on the other hand, how successful he considered the farmer to be. In neither case, however, did it appear that the agents in central Kentucky, where beef cattle are dominant, considered beef cattle operators to have either better judgment about farming or to be more successful than their neighbors who were raising hogs.

Thus, in summary, it seems evident that the dominance of an enterprise in an area affects the agent's relationship to the farmer in some respects but not others. It most importantly affects a number of perceptions of the agent of his relationships to farmers, including: the amount of time that the agent spends in dealing with matters of the dominant as compared with the subordinate enterprise; the relative frequency with which the agent deals with beef cattle or hog problems on farm visits; his initiative in contacting beef cattle and hog farmers; and, the relative efficiency in promoting recommended practices to beef cattle and hog producers. The dominance of beef cattle in the media perhaps induces the agent and farmers more often to use field days and called meetings as a means of disseminating information about hog production. On the other hand, it is quite important that in the areas studied there is no evidence that the sheer number of contacts between extension agents and farmers was affected by enterprise dominance. From this one might conclude that, in its effects on the extension agent's role, enterprise dominance induces greater support for the dominant enterprise but does not prevent the agent from developing ways and means of supporting subordinate enterprises to the extent that he perceives this to be important. This conclusion is extended in the analysis of data relating to farmers' information seeking activity, their use of improved technology and satisfactions with their enterprises, which follows.

Use of Other Agencies and Media for Information Purposes

Farmers obtain helpful information from many sources in addition to the Cooperative Extension Service. Sometimes the efforts of the other sources are coordinated through the agent's office and sometimes they are not. Use of the Agricultural Experiment Station and of

extension or research bulletins are cases in point. Frequently, the agent may refer the farmer to an experiment station researcher or distribute a bulletin, but on other occasions the farmer may seek advice or obtain the publication directly himself. Much of the farm information in newspapers, on radio, and even on TV is supplied by the Cooperative Extension Service, often through the agent although these media have independent means of obtaining relevant farm information which are often used. Even the information obtained by farmers from salesmen, dealers and others sometimes comes originally from the Cooperative Extension Service, although much comes from private sources. Obviously, it is not possible to identify the initial source of information and to do so is not important for present purposes. The fact is that farmers identify various persons, agencies and media from which they have obtained helpful information. The important question here is whether there is an enterprise-dominance effect in the use of these agencies and media.

One would like to know the particular sources from which the beef cattle producer, for example, had obtained information relevant to beef cattle production. Human memory being what it is, the recall of sources for most types of information is not very reliable. Moreover, most sources supply a variety of types of information rather than information relevant only to one enterprise. Consequently, farmers were asked only whether they received helpful information (of any kind) from a source. However, if a farmer who has an important beef cattle (or hog) enterprise indicates that he has received helpful information from a source, we suspect that frequently the information pertains to the important enterprise. We thus attempted to determine whether farmers with *important* beef cattle enterprises in the central Kentucky area more often than farmers with *important* hog enterprises used a particular source *and* whether the difference was greater than that which obtained for beef cattle and hog producers in the western Kentucky area.

In Table 10, which summarizes area differences indicative of beef cattle dominance in uses of media, patterns of greater source-use by specialized beef producers (at least three of four indicators) exist for: (a) the use of farm magazines, (b) radio, (c) television, and (d) information from commission men. Except for the use of farm magazines, these differences remain when farmers with similar education and scale of farming are compared. Thus, there appears to be an enterprise-dominance effect in relation to radio, television, and the use of commission men as sources. However, the effect is rather small. The difference in the level of source utilization for two of the sources is in

the range of 5 to 15 percentage points. Only for the use of radio does a more substantial impact exist.

Table 10.— Beef Cattle Enterprise Dominance and Use of Selected Information Sources for Farmers with Important Beef Cattle and/or Hog Enterprises.

Source of Information	Indicator of Enterprise Importance[b]			
	Gross Sales	Ranks of Enterprises	Relative Enterprise Importance: Gross Sales	Relative Enterprise Importance: Ranks
Newspapers			+	+
Magazines		+[a]	+	+
Radio	++[a]	+	++	++
Television	+		++	+
Farm bulletins		-		++
Ky. Agr. Exp. Sta. personnel		-	-	+
Vo. Ag. teachers		-		-
Agr. Extension Specialists	+			
Soil Conservation Service				
Agr. Stab. + Cons. Com.	-	++		++
Salesmen			-	
Dealers	-	+	+	
Storekeepers				
Bankers		+		-
Commissionmen	+	+	+	+

[a] A plus (+) entry indicates that farmers with important beef cattle enterprises in central Kentucky more often than farmers with important hog enterprises use a particular source and that this difference is 5 to 15 percentage points greater than the difference, if any, that obtains for beef cattle and hog producers in western Kentucky. A double plus (++) indicates that the difference in percentages of beef cattle and hog producers using a source in central Kentucky exceeds 15 percentage points. A minus (-) or double minus (--) signifies differences of the same magnitudes, but in which hog producers more often use the source than do beef cattle producers in central Kentucky.

[b] See Table 9 for definitions.

In view of the earlier finding that there was more information about beef cattle than hogs in newspapers one might be at first surprised that this source was not indicated as a favored source by beef cattle producers. In fact it was more often used by beef cattle producers in central than in western Kentucky. However, in neither area did producers for whom beef cattle were an important enterprise more often report having received helpful information from the newspapers than did hog producers.

Although little of the difference in utilization of information sources by farmers could be attributed to enterprise dominance, there is the further possibility that more beef cattle than hog producers in *both areas* used particular information sources. If this occurred, a general bias of beef cattle (or hog) producers toward particular sources is indicated. However, in use of these types of information sources, beef and hog producers generally used such sources to about the same degree. Not even the newspapers, which in both areas had more information about beef cattle than hogs, were more often used by beef cattle than hog producers. Thus, in their use of media or sources farmers engaged in these two enterprises did not manifest patterns of selective utilization.

What does one conclude from these findings?

First, considering the total number of these sources of farm information, enterprise dominance had relatively small effect, i.e., the dominant enterprise affected at most only three sources. From this standpoint, the general hypothesis of an enterprise dominance effect on use of communication sources does not seem valid.

Second, what of the possibility, nevertheless, of an enterprise dominance effect on specific information sources? In this respect, the degree of influence which could be attributed to enterprise dominance on use of media is the main consideration, and on the whole this was rather small. Thus, the effect of enterprise dominance could be idiosyncratic to the farmers studied. However, that two of the media manifesting a dominance effect were electronic media—radio and television—suggests that the enterprise dominance hypothesis bears further investigation as these are perhaps the most sensitive of all media to popular interests in an area.

Other Farmers as Information Sources

In the diffusion and acceptance of new ideas the interpersonal relationships among farmers themselves have been found to be especially important. Where farmers' attitudes favor "scientific farming," as was the case in these study areas, the contacts among farmers normally function to speed the evaluation and acceptance of new ideas. A model of rational information seeking would predict that for his "important" enterprise the farmer would seek, or regard most highly, the advice of persons regarded as highly competent sources. Having found such sources he would contact them frequently.[18] It is

[18] Previous research generally confirms that opinion leaders are more competent and are more often contacted by followers than other farmers generally. See E. M. Rogers, *Diffusion of Innovations* (New York: The Free Press of Glencoe, 1962), pp. 232-250.

probably more difficult for farmers engaged in the subordinate than the dominant enterprise to find and contact competent personal sources.

The survey data support this hypothesis but in a way somewhat different from what was initially expected (Table 11). Even though beef cattle producers were more prevalent than hog producers in central Kentucky, the former traveled greater distances to contact personal sources and interacted with them more often (by comparison with the distances traveled and frequency of contact with sources by beef and hog producers in western Kentucky).[19] This evidence of an enterprise-dominance effect is equally characteristic of small and of large scale farmers. Thus, it was not the hog producers who most readily invested time and effort in contacting other farmers for information purposes but the beef cattle producers. While it was thought that hog producers might attempt to compensate for their less favored circumstances by going farther in search of other farmers as sources, this did not appear to have happened.

Table 11.— Beef Cattle Enterprise Dominance and Aspects of the Farmer's Contact with Other Farmers for Farmers with Important Beef Cattle and/or Hog Enterprises.

Indicator of Enterprise Importance[b]	Aspect of Contact	
	Beef producer source is more distant	Beef producer has more frequent contacts
Gross sales	+[a]	++[a]
Ranks of enterprise	++	++
Relative enterprise importance:		
Gross sales	+	+
Ranks		++

[a] See Table 10, footnote 1, for explanation of cell entry.
[b] See Table 9 for definitions of enterprise importance.

[19] As in the case of agencies and media as sources, the question asked each farmer in the survey does not permit us to say from his reply that the information obtained from another farmer pertained specifically to beef cattle or hog production. Most contacts involved discussion of a variety of topics, but where a farmer has an important beef cattle (or hog) enterprise the inference that his discussion frequently concerned matters of importance to that enterprise does not seem unreasonable.

In the survey farmers were asked to identify others whom they regarded as successful farmers and to indicate their relationships to those named. The designation of a farmer as "successful," of course, is to attribute a desirable quality to him, one which the farmer presumably seeks to emulate. Consequently, it was felt that relationships to such farmers should be especially important in the diffusion and acceptance of ideas and that the relationships might be affected by enterprise-dominance in the same way as relationships to farmers in general. The data (Table 12) suggest that where beef cattle were

Table 12.— Beef Cattle Enterprise Dominance and Aspects of the Farmer's Contact with Successful Farmers for Farmers with Important Beef Cattle and/or Hog Enterprises.

Indicator of Enterprise Importance[b]	Aspect of Contact	
	Beef producer source is more distant	Beef producer has more frequent contacts
Relative gross sales	++[a]	-
Farmer's ranks	+	
Relative enterprise importance:		
Gross sales	++	+
Ranks	++	

[a] See Table 10, footnote 1, for explanation of cell entry.
[b] See Table 9, for definitions of enterprise importance.

dominant, beef cattle producers traveled farther than hog producers to contact a person regarded as successful. Further analysis indicates that this tendency applied to both small and large scale producers. However, there was little or no evidence that beef producers in central Kentucky contacted farmers they designated as "successful" more frequently than did those in western Kentucky.

Thus, this research suggests that enterprise dominance affects the distance traveled in contacting another farmer and the frequency of contact. However, the measurement of farmers' contacts with other farmers as information sources was not sufficiently precise nor inclusive to exclude the possibility that some additional effects of enterprise dominance may exist. Our results are only suggestive.

TECHNICAL COMPETENCE IN BEEF CATTLE AND HOG PRODUCTION

It was earlier hypothesized that a communication system that favors the dominant enterprise in an area thereby may affect the technical competence of farmers engaged in their enterprise and by its neglect hamper the development of competence in subordinate enterprises. Indeed, we have found a possible enterprise-dominance effect in the agent's perceptions of their effort and in the utilization by farmers of certain information sources, notably radio, television, and livestock commission men. Moreover, the greater distance traveled to, and the more frequent contacts of beef cattle producers with, personal sources also could contribute to a relatively higher competence level on the part of beef cattle producers in central Kentucky. On the other hand, of course, the greater attendance at meetings and field days by central Kentucky hog producers may tend to balance the effects of these factors.

The technology in use on the farm is an important indicator of the progressiveness of the farmer and the general efficiency of the farming operation. A common measure of the level of technology in use is the proportion of a list of relatively new farming techniques applicable to the farm that the farmer has adopted. In this study a list of practices was prepared in consultation with beef cattle and hog specialists at the University of Kentucky; it is arbitrary in that in no sense is it a sample of technology.[20] Nevertheless, previous research experience has indicated the efficacy of such indicators.

Since the list is arbitrary, the absolute score values for farmers mean relatively little, although it is at least interesting that in each area more than half of the farmers had adopted more than half the list of practices for each enterprise. More notable is that for both enterprises the levels of technology, as indicated by these indices, were higher in the central than in the western Kentucky study area.

The larger scale of farming and the higher educational level of farmers in the central Kentucky area also can be expected to affect the level of technical competence of farmers in this area, and it does. In attempting to determine whether there is an enterprise-dominance effect, therefore, it is necessary to control for these factors.

[20] Practices for beef cattle were: time of year poor producing cows were marketed, frequency of testing cows for tuberculosis, acreage of improved pasture per cow, average age of heifers at breeding, use of stilbesterol, and use of fertilizer on corn. For hogs the practices were: use of special diet for sows and gilts at breeding time, use of special diet for sows at farrowing, average age of gilts at breeding time, qualities looked for in selecting gilts for breeding, age of pigs at weaning, worming pigs before 4 months old, age of pigs at beginning of creep feeding, and use of fertilizer on corn.

Comparison of the improved practice adoption levels of beef cattle producers in central and western Kentucky at different levels of farm-scale or education indicates that the extent of technical competence is substantially greater in central Kentucky where beef cattle are dominant than in western Kentucky where they are not (Table 13). However, the competence levels of hog producers (Table 14) in central Kentucky also were substantially higher than for western Kentucky hog producers. Thus, if enterprise dominance accounts for the greater competence of beef producers in central Kentucky, then special conditions (such as the more rapid diffusion of hog than beef practices during the years between the two surveys in 1963 and 1965) must exist to account for the competence of central Kentucky hog producers *despite* the subordinate status of the enterprise.

A consideration of the farm practices in each index does not suggest that a differential rate of diffusion favoring hog practices is likely to have occurred. Nor does it seem likely that attendance at farm meetings and field days would be so much more effective than other media that it would lead to a greater competence in hog production sufficient to override enterprise-dominance effects if they occur. Further analysis also does not indicate that there were differ-

Table 13.— Percent of Farmers Using 50 Percent or More of Applicable, Improved Beef Cattle Practices by Area, Scale of Farming, and Education of Farmer.

Attribute	Central Kentucky	Western Kentucky
	Percent	Percent
1. Scale: Total farm receipts		
$8,000 or more	89 (N=72)	77 (N=35)
$7,999 or less	65 (N=31)	62 (N=69)
2. Scale: P-M-W-U[a/]		
3,500 or more	89 (N=46)	84 (N=31)
2,000 - 3,499	86 (N=35)	66 (N=32)
1,999 or less	91 (N=25)	53 (N=47)
3. Education		
9 or more years	83 (N=76)	69 (N=45)
8 or less years	80 (N=30)	63 (N=65)

[a/] Productive-Man-Work-Units--a measure of labor requirements of existing farm enterprises.

Table 14.— Percent of Farmers Using 50 Percent or More of Applicable, Improved Hog Practices by Area Scale of Farming, and Education of Farmer.

Attribute	Central Kentucky	Western Kentucky
	Percent	Percent
1. Scale of Farming: Total farm receipts		
$8,000 or more	90 (N=51)	69 (N=35)
$7,999 or less	79 (N=14)	50 (N=44)
2. Scale of Farming: P-M-W-U[a]		
Large	84 (N=25)	79 (N=32)
Medium	93 (N=29)	50 (N=32)
Small	-	-
3. Education		
9 or more years	96 (N=45)	65 (N=31)
8 or less years	70 (N=20)	50 (N=51)

[a] Productive-Man-Work-Units--a measure of labor requirements of existing farm enterprises.

ences in the type of hog production between the central and western Kentucky areas that could account for the relatively high technical level attained by central Kentucky producers.

In consequence, the evidence does not support the hypothesis that enterprise dominance is related to the greater technical competence of beef cattle producers in the central Kentucky area. Instead, the evidence points to the existence of some factor (or factors) that had generated a higher level of competence among *both* beef cattle and hog producers in central Kentucky. Very likely the most important factors were that (a) the agents in central Kentucky gave more emphasis in their work both to technology of beef cattle and hogs than did those in western Kentucky, and (b) at low as well as high farm-scale levels substantially more farmers in central than western Kentucky obtained information from a variety of sources and media. Although the evidence is not definitive, because the data on the use of these sources did not permit us to link the source directly to the adoption of particular practices, it is quite persuasive. The impact of information source differentials of this magnitude and extent is quite likely to be such as to override the effects of enterprise dominance if any exist.

FARMERS' SATISFACTIONS WITH THEIR ENTERPRISES

As indicated earlier, it was hypothesized that the existence of a dominant enterprise in an area would function in such a way as to exaggerate the felt satisfaction of farmers with the enterprise. A farmer's general satisfaction with an enterprise is ordinarily a composite of his satisfaction with various aspects of an enterprise. It was the general attitude of satisfaction, rather than the specific aspects, that was measured in this study. Each farmer was asked how often he was satisfied with beef cattle (or hogs). The farmer might respond that he was satisfied "all of the time," "a good deal of the time," "about half the time," "occasionally," or "hardly ever." Thus, his response reflects his attitude of satisfaction with beef cattle, hogs, and each of his other enterprises. In addition, each farmer was asked to rank all of his enterprises in order of his overall satisfaction with each enterprise. Responses to both questions were combined in an index of enterprise satisfaction. For example, a farmer who reported that he was satisfied with both beef cattle and hogs all of the time, but ranked hogs below beef cattle in overall satisfaction, would be designated as being less satisfied with hogs than with beef cattle.

What we want to know is whether farmers for whom beef cattle and hogs were important enterprises were more highly satisfied with beef cattle in the area where they were the dominant enterprise than in the area where hogs were equally important. The importance of hogs or beef cattle to the farmer, of course, was measured both in terms of the relative contribution of the enterprise to farm income and as the farmer ranked the enterprise in relation to other enterprises. Regardless of the indicator of enterprise importance, many more beef cattle producers in central Kentucky were highly satisfied with beef cattle than were hog producers with hogs, but this was equally true of farmers in western Kentucky (Table 15). In only 1 of the 15 comparisons was this relationship not found. Moreover, the same pattern of greater satisfaction with beef cattle than hogs was found for both the small and large farmers in each area. One must conclude, therefore, that the dominance of beef cattle in the central Kentucky area was not a factor in the relatively greater satisfaction with beef cattle. Stated differently, farmers were generally more often satisfied with beef cattle than with hogs.

This raises a question as to whether the greater satisfaction with beef cattle was due to more favorable economic conditions for beef cattle or to the presence of a cultural value that favored beef cattle over hogs, regardless of economic considerations. The determination of the relative favorability of economic conditions for beef cattle

Table 15.— Percent of Farmers Satisfied with Their Enterprise by Area and Indicator of Enterprise Importance.

Indicator of Enterprise Importance and Type	Extent of Satisfaction[a]		Index of Satisfaction[b]	
	Central Kentucky	Western Kentucky	Central Kentucky	Western Kentucky
Income from Enterprise[c]				
Beef cattle producers	52	85	12	70
Hog producers	25	45	21	34
Farmer's Rank of Enterprise[d]				
Beef cattle producers	56	86	18	82
Hog producers	33	52	60	70
Relative Importance of Beef to Hogs: Gross Sales[e]				
Beef cattle producers	53	86	15	79
Hogs producers and hogs and beef equal	33	39	33	18
Relative Importance of Beef to Hogs: Farmer's Rank[f]				
Beef cattle producers	60	87	18	81
Hog producers and hogs and beef equal	-	45	-	61

[a] Farmer indicates that he is satisfied with the enterprise "all" or a "good deal" of the time.

[b] Two factor index computed from farmer's expressed satisfaction with each enterprise and his ranking of his enterprises as to "overall satisfaction."

[c] All farmers obtaining income from beef cattle or hogs.

[d] Percents apply to farmers who ranked the enterprise first or second among all their enterprises.

[e] "Beef cattle producers" means that gross sales from beef cattle were 60 percent or more of total sales from hogs and beef cattle. "Hog producers and hogs and beef equal" means that gross sales from beef cattle were less than 60 percent of total hog and beef cattle sales.

[f] "Beef cattle producers" means that the beef cattle enterprise was ranked by farmer two or more ranks higher than that of hog enterprise. "Hog producers and hogs and beef cattle equal" means that beef cattle were not ranked two or more ranks higher than hogs by the farmer.

and hogs is a complex problem in itself, one that is beyond the scope of this study. However, the farm analysis reports of the Department of Agricultural Economics for the years included in this survey seem to indicate that hogs were at least as profitable as beef cattle, when all costs were considered.[21] Moreover, a relatively simple indicator

[21] See *Ohio Valley Farm Analysis Group: 1963 Summary* (University of Kentucky Coopera-

(Continued on next page)

of economic conditions is the average prices paid for different types of cattle and hogs. Examination of these figures for the 1960-65 period indicates that in Kentucky, for the most part, prices for beef cattle and hogs rose or fell together, thereby being equally good or bad, as the case may have been, for both enterprises at the same time (Table 16). The exception is that 1963 was relatively better in respect to prices for cattle and calves than for hogs. With this exception,

Table 16.— Average Price per Hundred Pounds for Selected Classes of Meat Animals in Kentucky, 1960-65.

Class of Animal	1960	1961	1962	1963	1964	1965*
Cattle	$18.70	$18.60	$19.70	$19.20	$16.50	$17.20
Calves	25.50	25.60	27.00	26.80	24.10	24.50
Hogs and Pigs	15.50	17.00	16.50	15.10	15.00	16.90

*Estimated average price for January through April 1965.

Source: Meat Animals: Farm Production, Disposition and Income by States, 1960-64 Revised Estimates, U.S.D.A.: Economic Research Service Statistical Bulletin 400, and charts of price trends prepared by the Department of Agricultural Economics, University of Kentucky.

prices were relatively high for each enterprise during the years prior to the survey in western Kentucky in 1963, relatively low in 1964, and somewhat improved during the early part of 1965 just prior to the survey in central Kentucky. There is thus little or no evidence from the prices paid for beef cattle and hogs or from the more detailed farm analysis studies that economic conditions favored beef cattle producers over hog producers during the survey period. It does not seem likely, therefore, that the greater satisfaction with beef cattle in *both* areas was due to more favorable economic conditions, which raises the possibility that farmers generally possess more favorable attitudes toward beef cattle as an enterprise.

There is some evidence, however, that economic considerations also affect farmers' satisfactions with their enterprises. This is sug-

(Footnote continued from preceding page)
tive Extension Service and Agricultural Experiment Station and Ohio Valley Farm Analysis Group, Inc. Cooperating), and the *Bluegrass Farm Analysis Group: 1965 Summary* (University of Kentucky Cooperative Extension Service and Agricultural Experiment Station and Bluegrass Farm Analysis Group, Inc. Cooperating).

gested by the difference in *satisfaction level* between western and central Kentucky. In general, more farmers in western Kentucky were satisfied with *both* beef cattle and hogs than were farmers in central Kentucky (Table 15). For example, 85 percent of the western Kentucky farmers were satisfied with beef cattle compared with only 52 percent of the central Kentucky farmers, and 45 percent compared with 25 percent of the western and central Kentucky hog producers, respectively, were satisfied with this enterprise. The survey of western Kentucky farmers in 1963 was made, as already noted, at a time when prices for beef cattle and hogs had been relatively high. Central Kentucky farmers were surveyed (1965) after a period in which prices for both enterprises had been relatively low. It thus may have been that the difference in *satisfaction level* between the two areas were in part a response to the difference in economic conditions.

The data on farmers' general satisfaction with beef cattle and hogs thus suggest that this reflects *both* a more favorable disposition toward beef cattle than hogs, regardless of the relative economic importance of the enterprise in the area, *and* the prevailing economic conditions at the time of the survey.

SUMMARY AND CONCLUSIONS

The purpose of this investigation was to assess the effect of enterprise dominance on selected aspects of the infrastructure of agriculture (viz. the role of the County Extension Agent for Agriculture and the structure of communication from agencies to farmers and from farmer to farmer), and on farmers' use of new technology and their satisfactions with the dominant as compared with the subordinate enterprise. The hypothesis was that dominance of a particular type of farming in an area is signified by a set of cultural and social values that dispose the agencies serving farmers and the farmers themselves to favor interests and activities associated with the dominant enterprise and to disparage and neglect activities associated with subordinate enterprises.

Measurement of enterprise-dominance effects involved the selection of (a) an area in central Kentucky in which beef cattle production was more important than hog production and (b) an area in western Kentucky in which these two enterprises were equally important. Farmers in these areas were asked about their use of sources of information, their contacts with other farmers for information purposes, their use of improved farming practices, and the satisfactions with their enterprises. The Extension Agents for Agriculture in the respec-

tive areas also were interviewed. Meanwhile, an effort was made to hold constant, either in the selection of the areas or in the data collection and statistical analysis, other factors relevant to the dependent variables of interest, such as the scale of farming, education of the farmer, information sources available, and the like.

Unfortunately, it was not possible to find in Kentucky areas that were alike except for differences in dominance of beef cattle or hog production. In particular, tobacco was more important in the area where beef cattle were dominant than where beef cattle and hogs were equally important. The major consequence of this was the impossibility of distinguishing between the effects of beef cattle dominance on communication structure and the possible effects of tobacco dominance. As this weakness was of no consequence where no enterprise-dominance effect of any kind was found, the findings were more conclusive as to what enterprise dominance did *not* affect than as to the effects that it did have on the dependent variables of interest.

The survey farmers reflected in their own enterprises the area differences in relative dominance of beef cattle and hogs, but, in addition, central Kentucky farmers generally had had more formal schooling, were more commercial minded in their farming operations, made greater use of information sources, and generally were farming on a larger scale than their western Kentucky counterparts.

The hypothesis that the presence of a dominant enterprise—beef cattle—would affect the structure of communications with farmers in the area was supported in the following ways: (a) the amount of time the extension agent spent on matters pertaining to beef cattle compared with hogs, (b) the agent's perception of farmers' commitments to hog production, (c) the relative numbers of requests for information the agents received from beef cattle and hog producers, (d) the proportions of his farm visits in which the agent dealt with a beef cattle or hog production problem, (e) the farmers with whom he most often initiated contact, and (f) the relative emphasis of the extension agents on recommended practices pertaining to beef cattle and hogs. In addition, a dominance effect was found with respect to: (g) the farmers' use of radio and television, and commission men as information sources, and (h) in the distance traveled to, and the frequency of contacts with, other farmers as information sources.

However, in this study beef cattle dominance did not affect the amount of information pertaining to each enterprise in newspapers, the frequency of the extension agent's contact with hog producers, or his perceptions of the relative qualifications and success of hog producers. Enterprise dominance in an area did not affect the use by

farmers of most sources or media of information—newspapers, magazines, farm bulletins, vocational agriculture teachers, Soil Conservation Service, the Kentucky Agricultural Experiment Station, salesmen, dealers, and bankers.

Neither the technological competence of farmers engaged in beef cattle and hog production nor their satisfaction with these two enterprises was affected by enterprise dominance as measured.

From the standpoint of those wishing to bring about change in the effect of enterprise dominance on programs of planned change, however, these findings are encouraging. Although enterprise dominance may affect certain aspects of the infrastructure of agriculture, in this study the overall impact did not seem to be large. Appropriate adaptive activities can be undertaken. In fact, in the central Kentucky area where beef cattle were dominant the agents and farmers producing hogs had adapted to the situation by making greater use of meetings and field days to dispense and obtain information about hog production. Apparently the communications system as it is now developed in Kentucky is sufficiently varied and flexible, and competent sources sufficiently free at least of this type of structural control, that one need not be greatly concerned that some farmers with subordinate enterprises will fail to obtain needed information because of the mere prevalence of another enterprise in the area. The effects of enterprise dominance on extension agents were generally recognized by the agents themselves, which is the essential first step in developing appropriate adaptive action, and it was apparent that they were attempting to do something about the situation. Nevertheless, their behavior was affected and they felt frustrated in eliciting farmer support. Other means of coping with the problem of enterprise dominance are evidently needed.

Initially, it was assumed that the social and economic components of a farm enterprise would vary together, i.e., that an enterprise would be highly valued in an area where it is the predominant means of making a living, and that the converse would also be true. The number of farms having an enterprise and the value of sales were therefore selected as appropriate and easily measured indicators of the dominance of an enterprise in an area. The findings, however, demonstrate the limitations of this assumption. More newspaper space was devoted to information about beef cattle and farmers were more satisfied with beef cattle than with hogs in both western and central Kentucky, i.e., regardless of economic dominance. Even if the greater newspaper space devoted to beef cattle reflected the relative supply of news copy for the two enterprises rather than the attitudes of the newspaper

editors, it seems likely that both among farmers and among at least some of the agencies that served them there were more favorable attitudes and values toward beef cattle as an enterprise than toward hogs, regardless of the dominance of the latter in economic terms. Thus, future research on enterprise dominance should take into account the possibility of independent variability of the economic and cultural or attitudinal components of farming enterprise.

Further questions that cannot be answered by this research were raised by the fact that newspapers devoted more space to information about beef cattle than hogs, yet farmers for whom beef cattle were important did not more often say that they gained useful information from newspapers but more often received useful information from radio and television. Radio and television are perhaps more sensitive than other media to enterprise dominance effects. Despite the attempt to focus on the informational utility of media messages, there is the possibility than beef cattle producers found radio and television more "helpful" on other grounds, e.g., the gratification of expressive interests. Clearly, to evaluate adequately this finding, it will be necessary to obtain more detailed and specific information than was gathered here, both about the content of media messages and the particular types of information found useful.

In earlier studies of types of farming regions, the measurement of relative enterprise dominance was not attempted in a precise sense; and, in other studies of industry dominance, such as in mill towns, coal towns, or fishing villages relative dominance is on an all-or-nothing basis. Moreover, only the specific effects of particular industries are studied. In the present case, it was assumed that the relative dominance of an enterprise in the order of magnitude of two to three or four times would be sufficient to produce measurable effects. The fact that enterprise-dominance effects were found with respect to only a few variables measured raises a question about this assumption. This is not to question the validity of the findings for the range in enterprise dominance measured, but it is possible that the relationship between enterprise dominance and various dependent variables may be curvilinear rather than linear. In other words, the research does not answer the question whether more significant effects might be found for these variables given a larger magnitude of enterprise dominance, i.e., above a critical threshold.

Consequently, this discussion of problems and issues, many of which have arisen in the course of the research, points up the fact that in many respects this attempt to measure and assess the effects of enterprise dominance must be considered exploratory in nature. As

such, the value of the research is less in conclusions reached than in the clarification of certain conceptual and methodological problems encountered, which should benefit future studies of enterprise dominance.

APPENDIX A. RESEARCH STRATEGY

The three hypotheses which concern the relationship between enterprise dominance and communication structure, the farmer's technical competence, and his satisfactions affirm a relationship between the dominance of a particular enterprise to some other particular enterprise and its effects on specific variables. This is consistent with the approach used in the early studies of types of farming regions designed to describe variation in rural life in the United States. Differences in the ways of life of a rural people were ascribed to the dominant type of farming—cotton, wheat, dairying, corn and livestock, etc. —in each region. Not only was a particular enterprise considered as dominant relative to particular other enterprises in each region, but also the relationships with various aspects of rural life were *specific* to the particular dominant and subordinate enterprises in each case. An example is what is described in the Corn Belt as the *specific dominance* of a corn and livestock type of farming (by comparison to the specific dominance of a "wheat," or "dairying" type of farming).

However, there may be also a general dimension of enterprise dominance. It may be, for example, that the relationship between enterprise dominance and communication structure not only holds where tobacco is dominant relative to cotton, or corn relative to soybeans, but is true also regardless of the particular enterprise. The dimension of *general enterprise dominance* is conceptually and analytically distinct from the *specific* dominance associated with relationships between particular enterprises. Thus, variation in the dependent variable, e.g., communication structure, technological competence, or farmer's satisfactions, can be regarded as a function of the effects of either *general* or *specific* enterprise dominance, or both.

These considerations suggest, for example, that to test the hypotheses of enterprise dominance one should select similar types of farming for study, such as beef cattle and sheep, or corn and soybeans, cotton and soybeans, or beef cattle and hogs. These patterns of agricultural enterprise are important components of the total agricultural enterprise in broad areas of the country, and there is broad similarity of the paired enterprises, although of course they differ in many details.

Because no two enterprises are identical, the possibility of an inter-

action effect on social structure exists unless it can be controlled or cancelled out by examining the relationship between each enterprise and social structure under both dominance and subordinate conditions, i.e., when the particular enterprise is dominant as well as when it is subordinate. Thus the preferred research design is described in Fig. 1.

Independent Variables	Enterprise X is very much more important than Y in the area	Enterprises X and Y are relatively equal in importance in the area	Enterprise Y is very much more important than X in the area
Hypothetical Relationship of Dependent Variables	Social structure associated with enterprise X is much better developed than comparable structure for Y	Social structures associated with enterprises X and Y are about equally well developed	Social structure associated with enterprise Y is much better developed than comparable structure for X

Fig. 1.—Relative importance in an area of Enterprises X and Y and social structure.

Given the foregoing minimum conditions, the research design permits assessment of three types of enterprise-dominance effects. First, comparison of the effects (or relationships) on the dependent variable(s) under each of the dominance conditions permits assessment of the presence of a *specific enterprise-dominance* effect. For example if beef cattle farmers in the area with beef cattle dominant are more competent than hog producers and the reverse exists in some degree where hogs are dominant, it indicates a specific enterprise-dominance effect of each enterprise on technological competence. Second, comparison of the effects under both conditions of enterprise dominance with the effects where both enterprises are equal permits assessment of the *general* enterprise-dominance effect. For example, if regardless of what enterprise is dominant (or subordinate), the farmers in an area where some enterprise is dominant are on the average more (or less) competent than in the area where both enterprises are equal, one may conclude that there is a general enterprise-dominance effect. Finally, in regard to our findings, there is a possibility that the structure of communications, the level of technological competence, or satisfaction of farmers may be greater with respect to enterprise X, *regardless* of whether enterprise X is dominant, equal, or subordinate to enterprise Y. Such a finding would indicate that the particular enterprise has effects on the variables in question which are unrelated to enterprise dominance as measured but is perhaps related to dominance of the enterprise on other dimensions.

APPENDIX B. COMMERCIAL FARMING ORIENTATION SCORE

In economic terms commercial farming—disposal of production through the market mechanism—is commonly contrasted to subsistence farming, which is production primarily for familial needs. Except under special conditions a commercial farm had been defined (1959) "as any farm with a value of sales from agricultural products of $2,500 or more." But commercial farming involves a pattern of related activities which can be viewed in a means-ends framework. In processual terms there is a flow of inputs of credit or capital, labor, technical knowledge, market information, and physical goods and their allocation through managerial decisions. Also, there is a flow of outputs of farm products, farm experience and the like. From this standpoint, a commercial farming orientation may be defined as a favorable attitude toward the flow of these types of inputs and outputs. Accordingly, the following items were developed and were included in the schedule.

1. As a general rule, do you think that a farmer is better off relying mainly on the experience he has acquired while farming, *or* do you think that in addition to relying on his experience a farmer should be trying as much as he can to learn modern ways of farming?
   a) ——— Rely only on experience
   b) ——— Both: How hard should he be trying to learn of new ways of farming?
      ——— Very hard
      ——— Fairly hard
      ——— Not so hard
      ——— Don't know
   c) ——— Hard to say
2. With farming the way it is nowadays, do you think that the best long-run policy for a young farmer raising beef cattle and hogs is to borrow money to increase the number of his livestock, or to stay out of debt as much as possible and expand by keeping back his own heifers and gilts?
   a) ——— Borrow money
   b) ——— Avoid debt and save stock
   c) ——— Hard to say
   d) ——— Don't know
3. Do you think that the difference between successful farmers and unsuccessful farmers is mainly in how hard they work, or mainly in how much time they spend planning their farming operation?
   a) ——— Hard work
   b) ——— Time spent planning
   c) ——— Don't know
   d) ——— Hard to say
4. Do you agree or disagree with this statement: Even for farmers who can afford new equipment, insecticides, etc., most new things in farming cost more than they're worth?

a) ——— Agree
b) ——— Disagree
c) ——— Hard to say
d) ——— Don't know

5. Do you think it is necessary to keep records of the things you do?
a) ——— Necessary
b) ——— Unnecessary
c) ——— Hard to say
d) ——— Don't know

6. Considering the different things that a farmer can go into, do you think that farmers are generally better off concentrating on just two or possibly three things, or do you think that he should try to produce many different things?
a) ——— Should have many things
b) ——— General farming
c) ——— Specialize or have two major enterprises
d) ——— Hard to say

In analyzing the items, responses were grouped and weighted as follows:

1. Attitude Toward Knowledge: experience vs. new technology
   0 Experience only; Both: not so hard, hard to say, don't know
   1 Both: fairly hard
   2 Both: very hard
2. Attitude Toward Credit: borrow vs. save
   0 Avoid debt and save
   1 Hard to say, borrow with extreme caution, don't know
   2 Borrow money
3. Attitude Toward Management: work vs. planning
   0 Hard work, hard to say, both are important, don't know
   1 Time spent planning, management
4. Attitude Toward Cost of New Technology
   0 Agree
   1 Hard to say, disagree, don't know
5. Attitude Toward Use of Records
   0 Unnecessary, hard to say, don't know
   1 Necessary
6. Attitude Toward Specialization in Farming
   0 Should have many things, general farming
   1 Hard to say, should concentrate, specialize or have a couple of enterprises

To derive a score with a range from 0 to 100, the actual score for each farmer was divided by the total possible score (eight, if all questions were answered) and the decimal fraction was multiplied by 100. Internal consistency of the score was analyzed by examination of item to total correlations, which were found to be satisfactory.

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